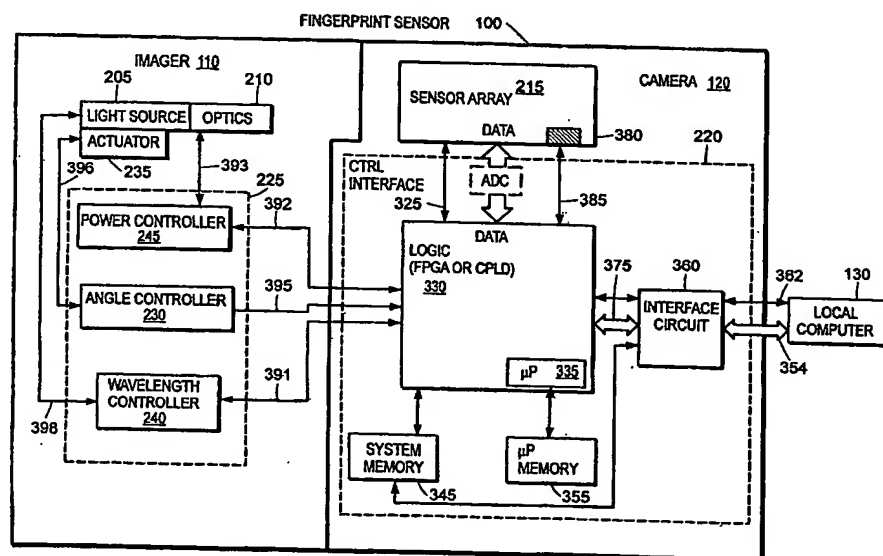


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- (57) Abstract:** An apparatus for image acquisition of topological features of the surface of skin. The apparatus comprises a waveguide, having an entrance edge and top and bottom surfaces; a light source, configured to direct a light beam at the entrance edge of the waveguide; a skin contact layer, disposed at or near the top surface of the waveguides; a holographic optical element (HOE), disposed at the top or at the bottom surfaces of the waveguide, configured to diffract the light beam incident from the light source to the skin contact layer; a sensor array, configured to detect light reflected from the surface of skin in contact with skin contact layer; and means for compensating for changes in the Bragg matching condition of the HOE due to temperature.



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